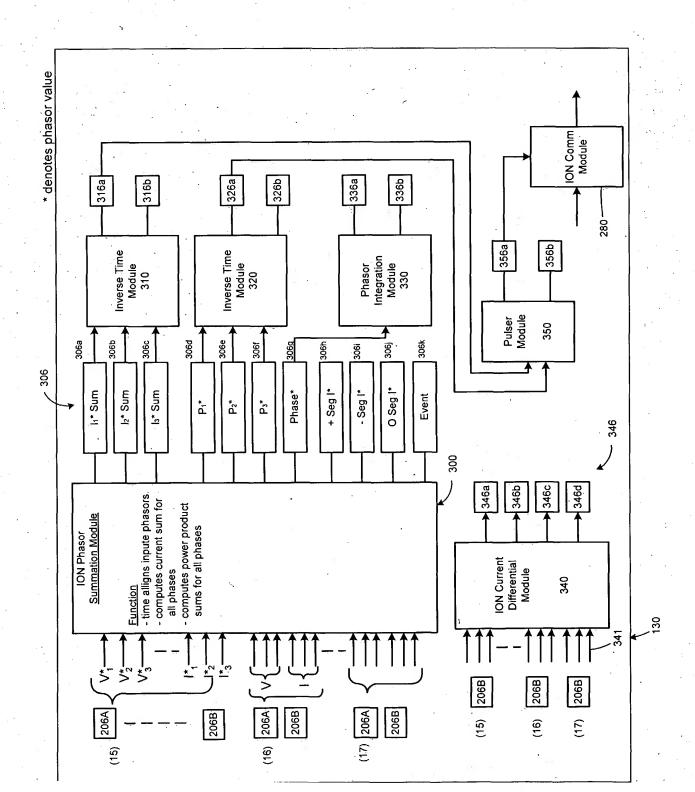


Phasion ION Moudle Diagram







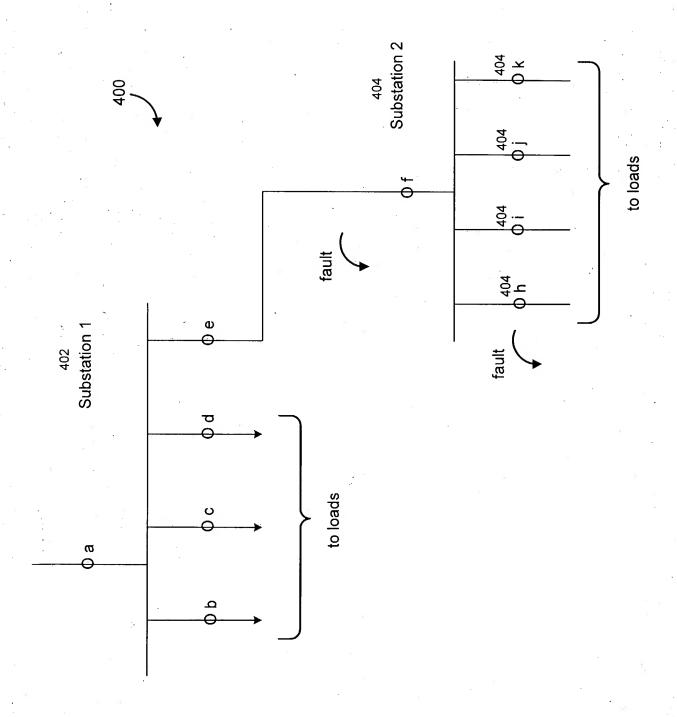


FIG. 6

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operating a plurality of sensor devices associated with a plurality of circuits of a electricity distribution system to produce outputs from said sensor devices that represent voltage and current parameters of the electricity in the plurality of circuits

605

receiving said sensor device outputs in a plurality of phasor transducers associated with said plurality of circuits

610

converting said sensor device outputs to digital data in said phasor transducers

615

at said phasor transducers, computing phasor data representative of the electricity in said circuits

620

outputting said computed phasor data from said plurality of phasor transducers onto a digital network to which said phasor transducers are connected

625

receiving over the digital network the phasor data from a plurality of phasor transducers

630

computing summation phasor data using the phasor data from the plurality of phasor transducers transmitting a synchronizing signal over the digital network to said plurality of phasor transducers

synchronizing the conversion of sensor device outputs into digital data based on said synchronizing signal

(optional) ₩

(optional) ₩

at one of said plurality of phasor transducers, measuring a fundamental frequency of the electricity in the circuits

gnal!

640

645

650

generating said synchronizing signal based on said fundamental frequency: 655

635

705

FIG. 7

(7/63)

for each one of a plurality of circuits that distribute periodic three phase electricity in an installation, operating current transducers associated with said one of said plurality of circuits, wherein each of said current transducers provides an output representative of an electrical parameter of electricity in a respective phase conductor of its respective circuit

receiving in a phasor transducer associated with each one of the plurality of circuits the outputs from the current transducers associated with the respective one of the plurality of circuits

710

715

730

in each phasor transducer, calculating data representative of a phasor of the current in the circuit associated with the current transducers whose outputs are

received therein

in each phasor transducer, converting the outputs from the current transducers to digital signals

720

from each phasor transducer, transmitting said data representative of a phasor onto a digital network via a network compatible port

in a phasor array processor coupled to said digital network, receiving data representative of phasors from the plurality of electrical circuits and calculating at least one parameter based upon the phasors of the plurality of electrical circuits

725

(optional) in the phasor array processor, time aligning the data representative of a phasor from the plurality of phasor transducers.

735

(optional) wherein said vector sum is a current phasor sum of all current phasor arrays from the plurality of phasor transducers.

(optional in the phasor array processor, computing a vector sum of the data representative of a phasor from the plurality of phasor transducers.

(optional) in the phasor array processor after computing the vector sum of the data representative of a phasor from the plurality of phasor transducers, transmitting an output to at least one protection device associated with one of the plurality of circuits whose phasor data was included in the vector sum to open said circuit if said vector sum exceeds a predetermined value.

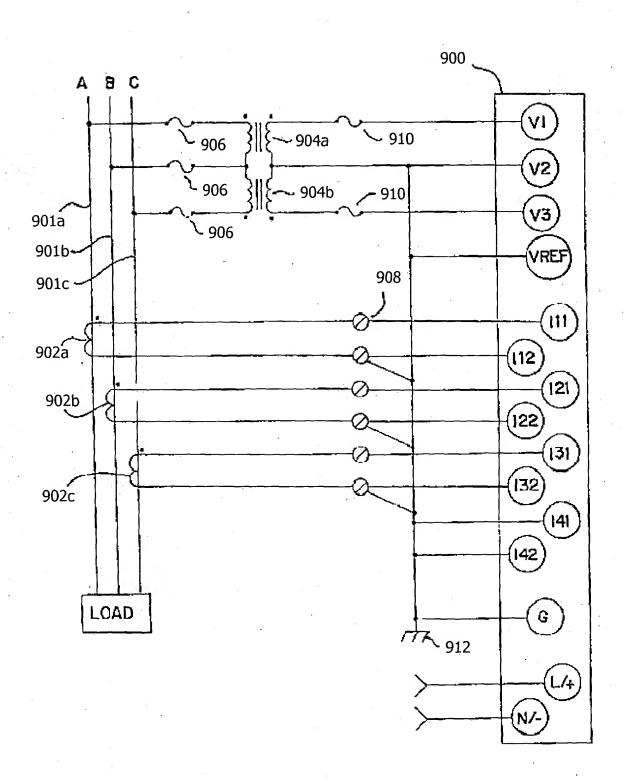
(optional) wherein said vector sum is a power phasor sum of all power phasor arrays from the plurality of phasor transducers.

755

740

FIG. 8

(8/63)



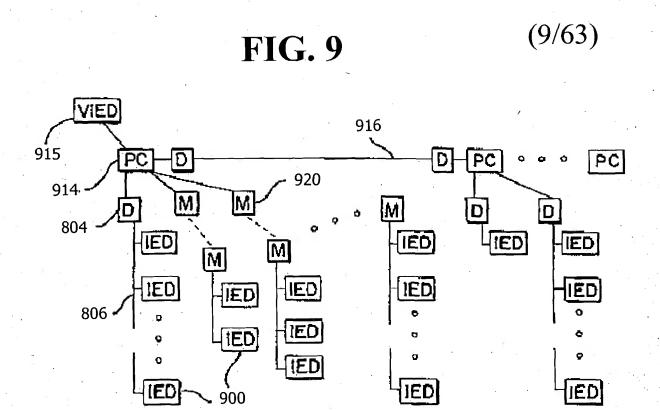
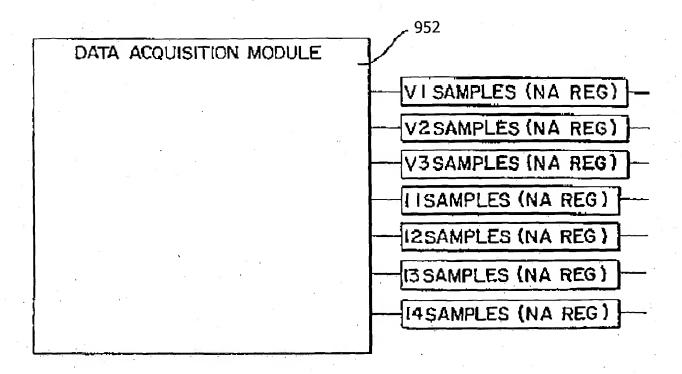
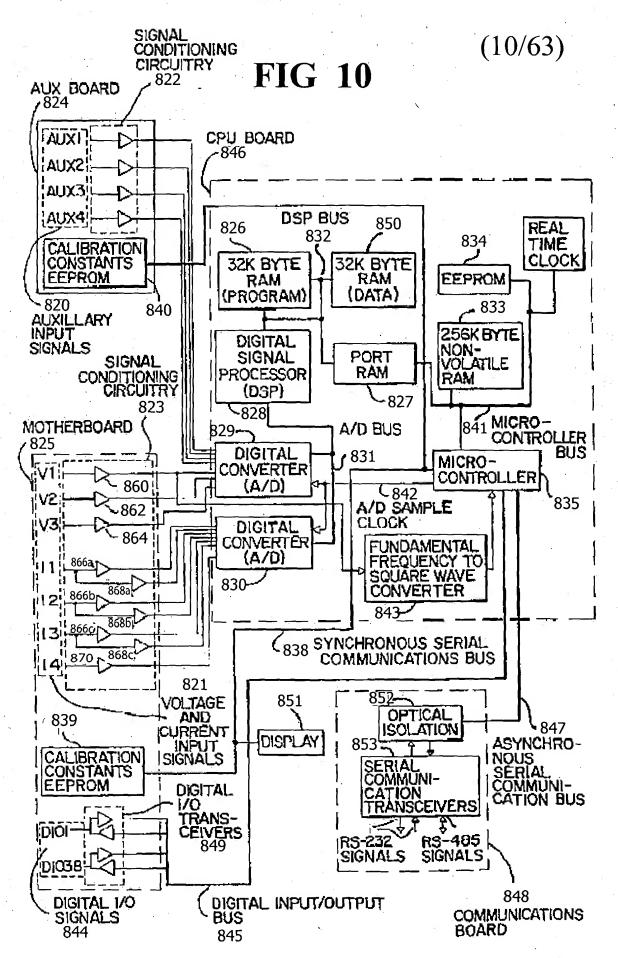


FIG. 11





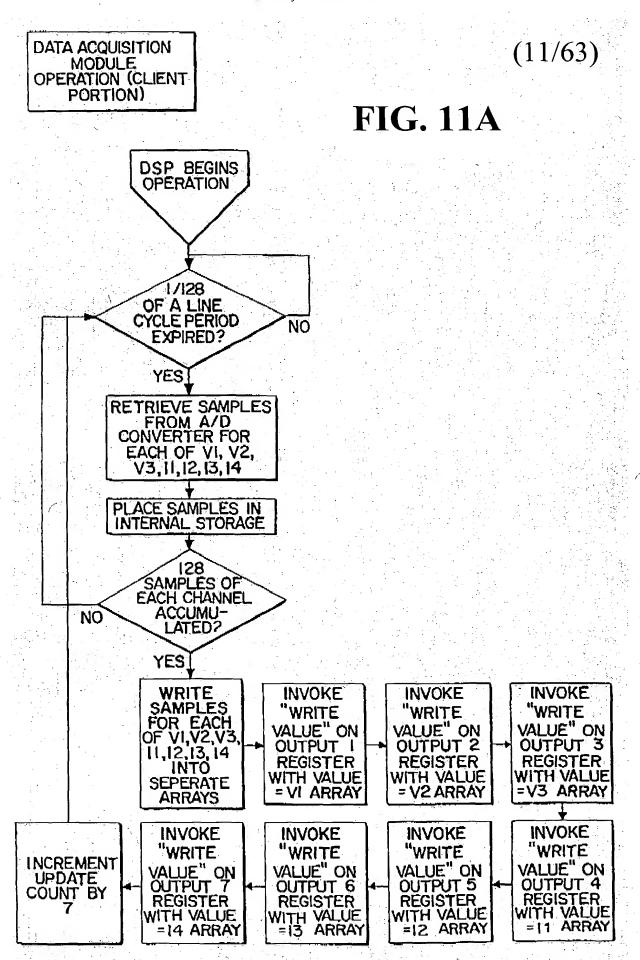
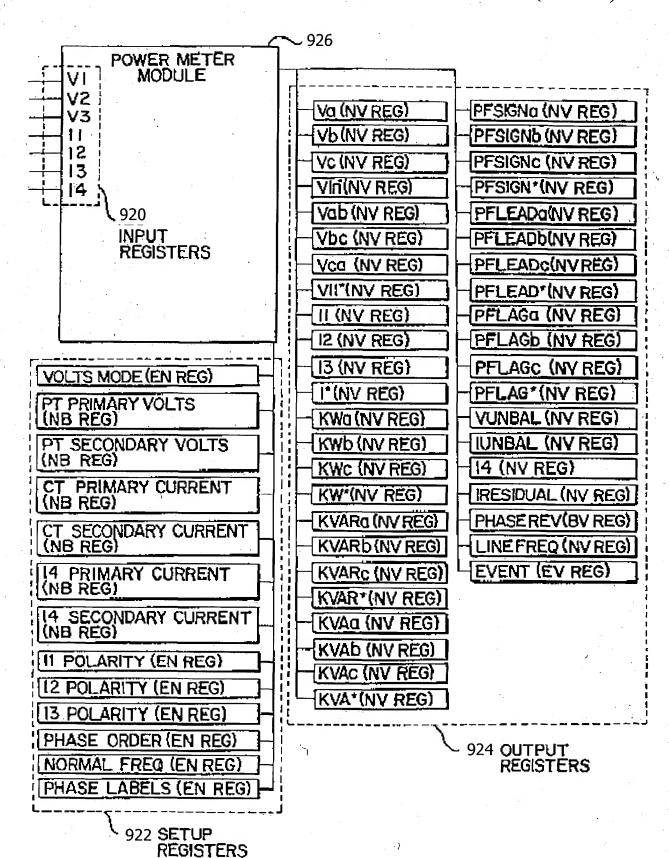


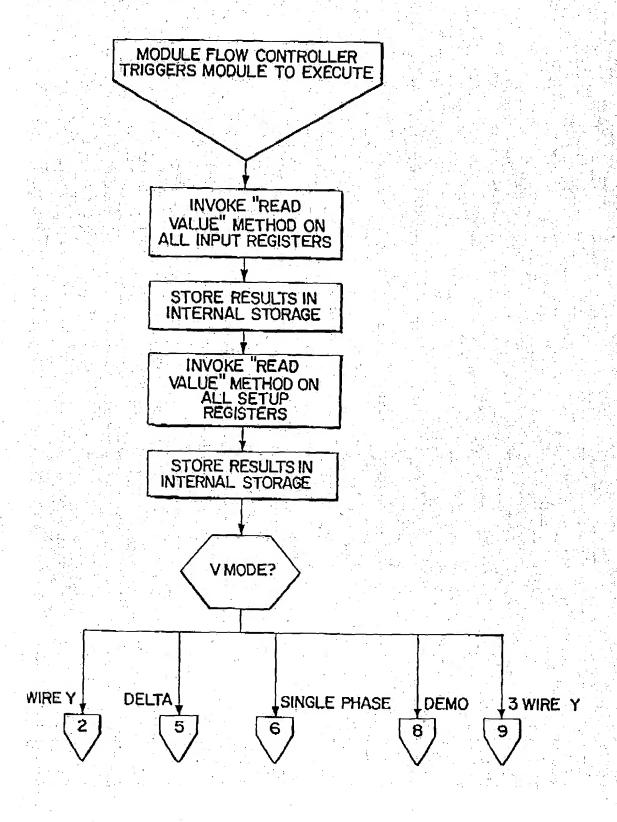
FIG. 12

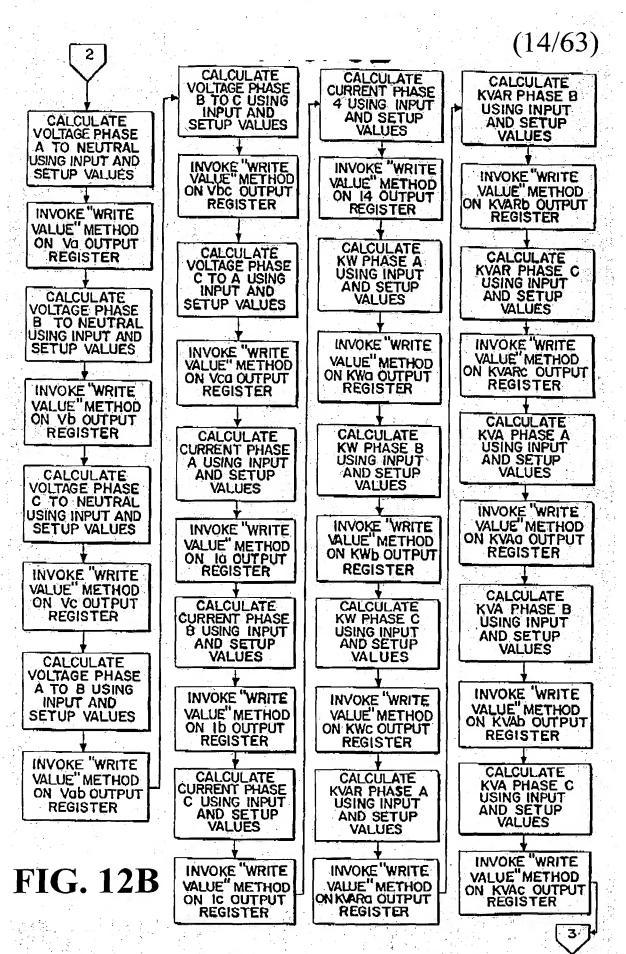
(12/63)



POWER METER MODULE OPERATION (CLIENT PORTION)

FIG. 12A (13/63)





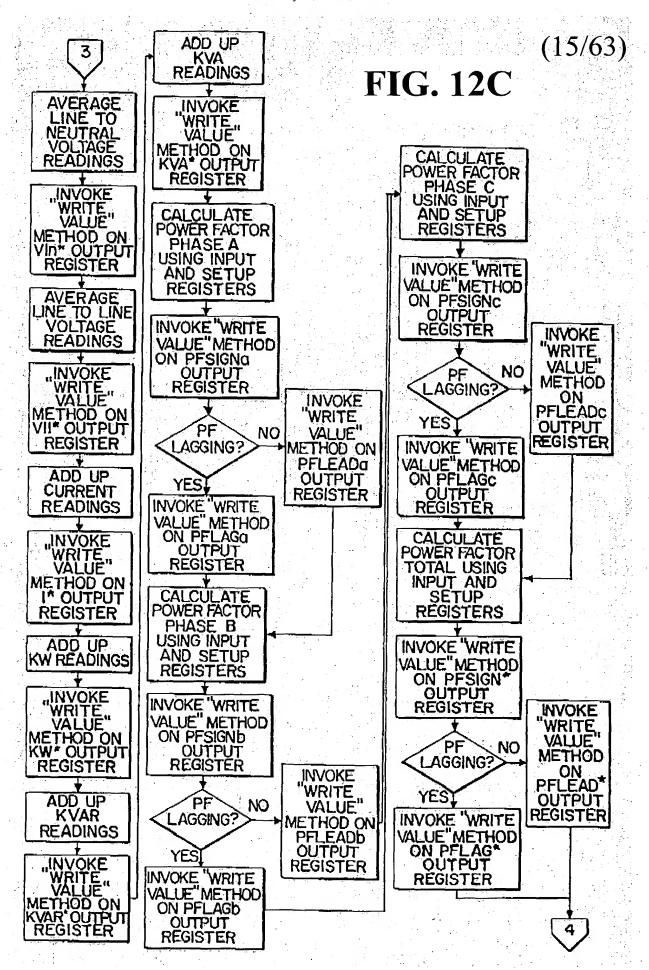


FIG. 12D

(16/63)

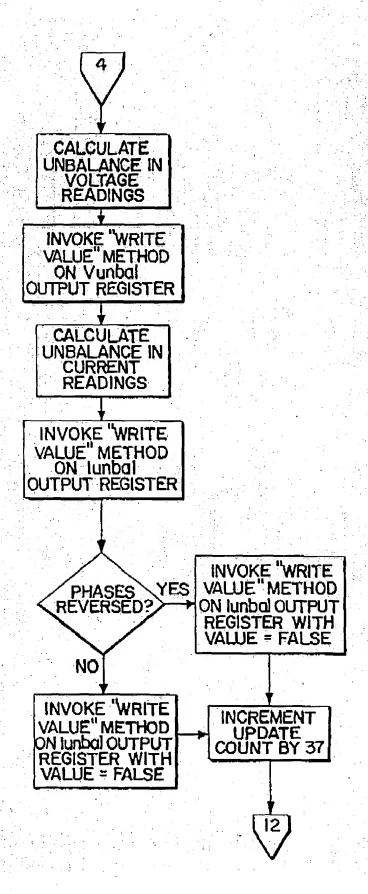
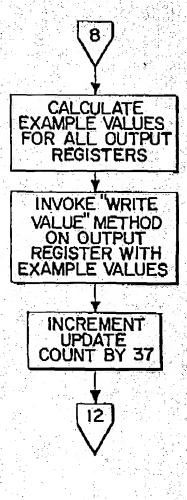
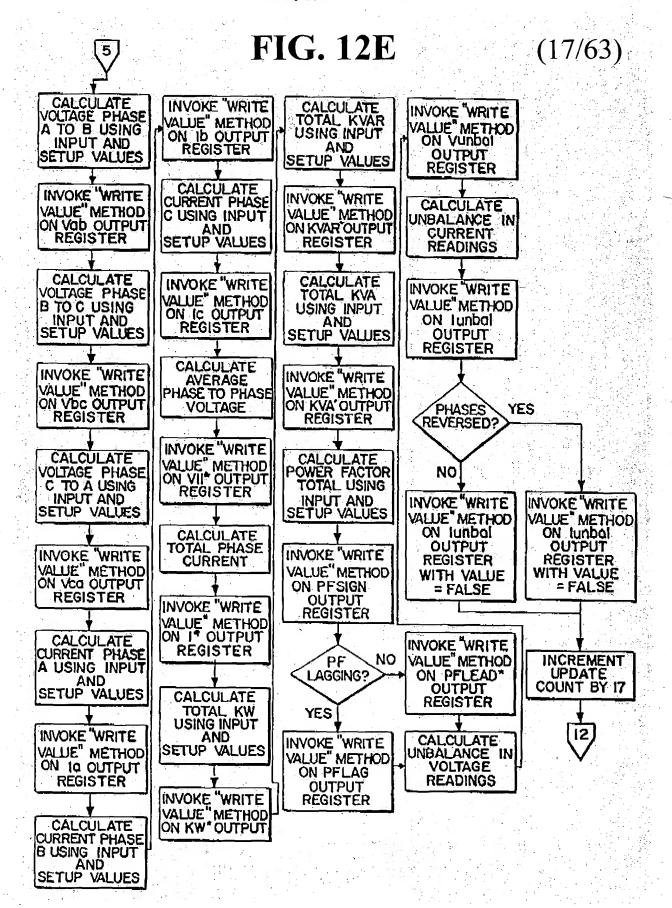
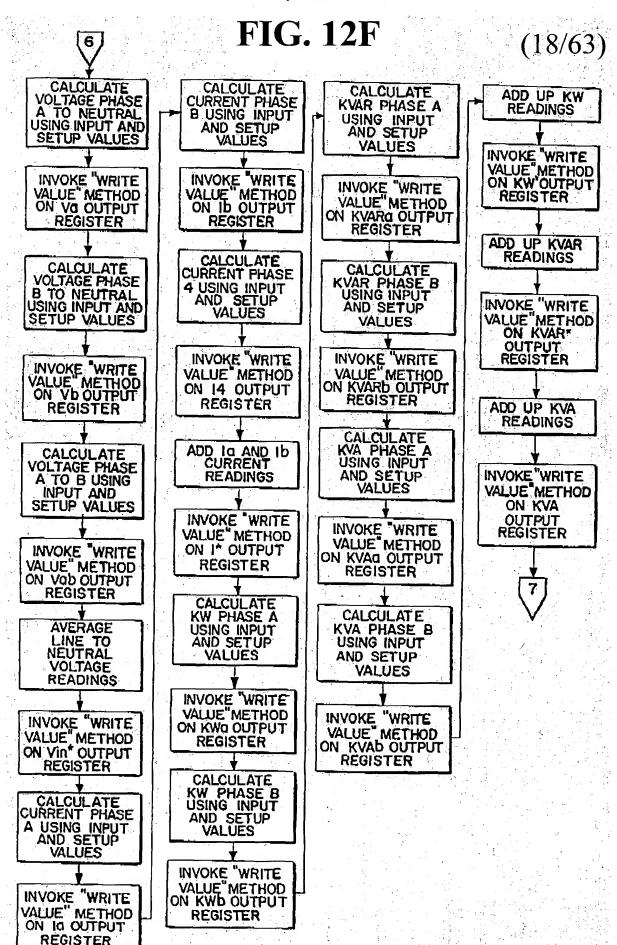
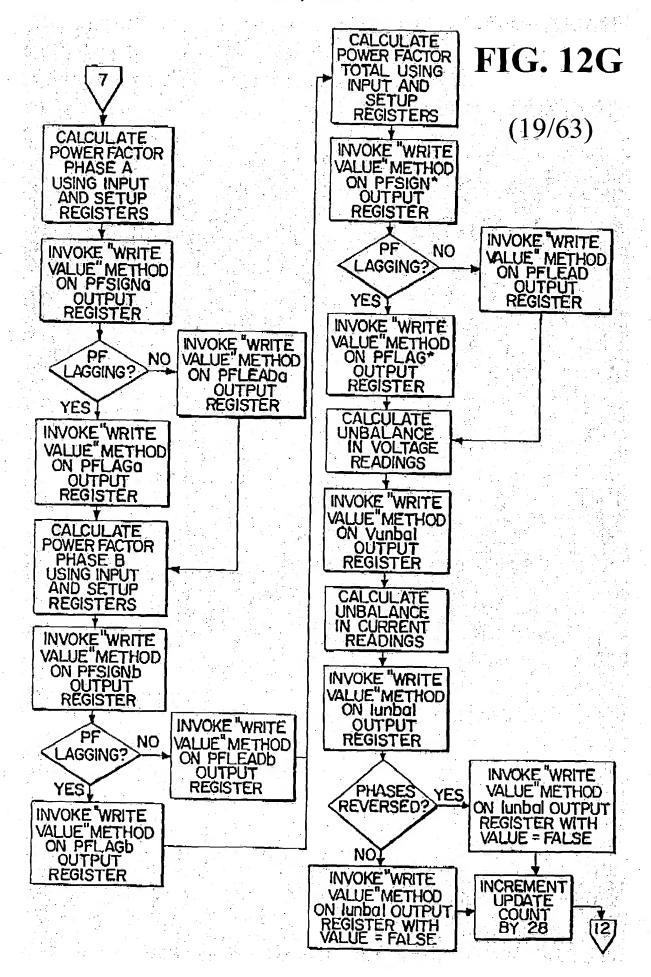


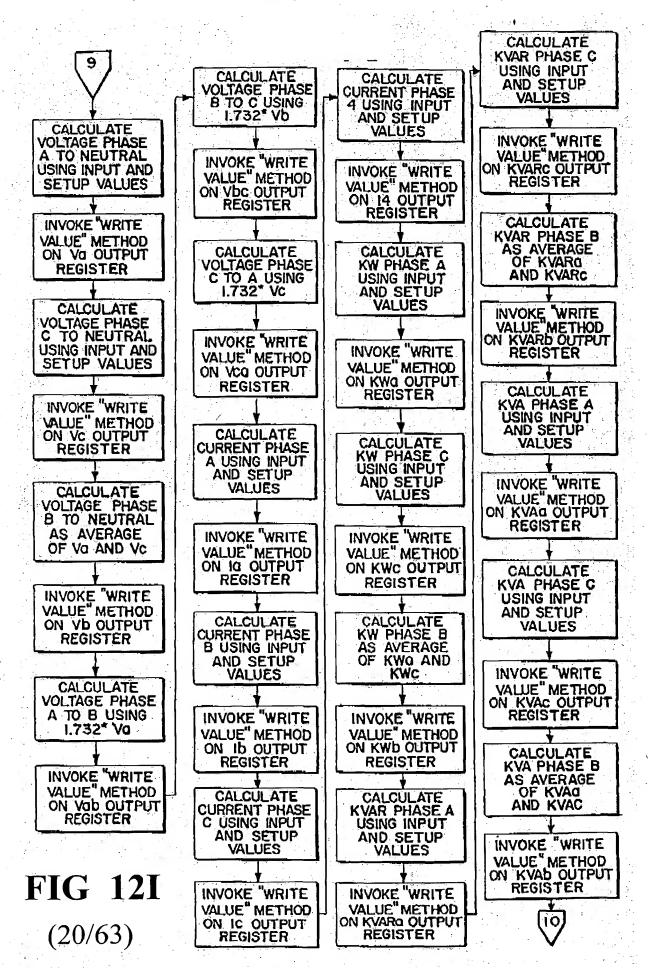
FIG. 12H











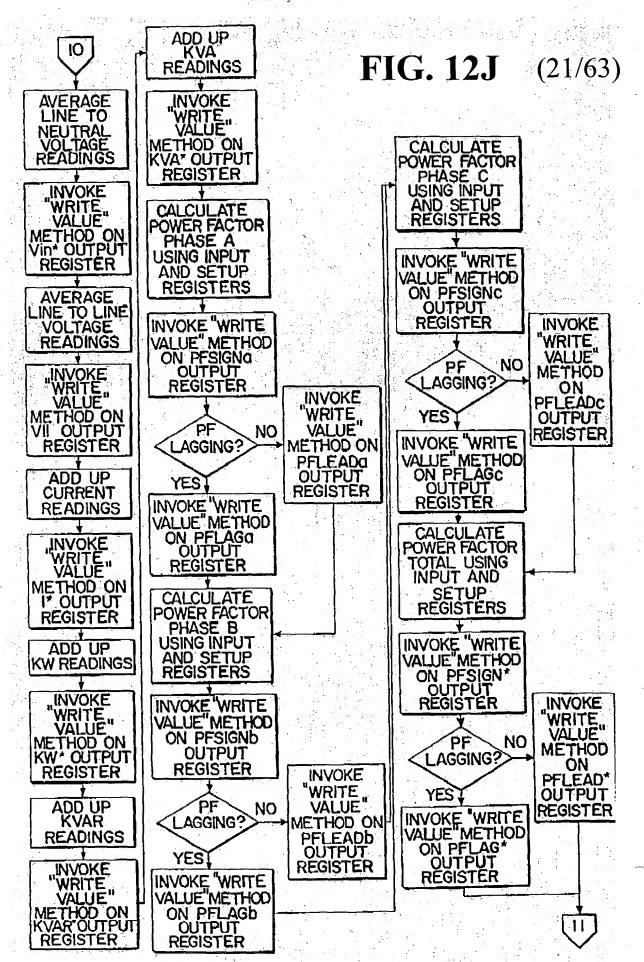
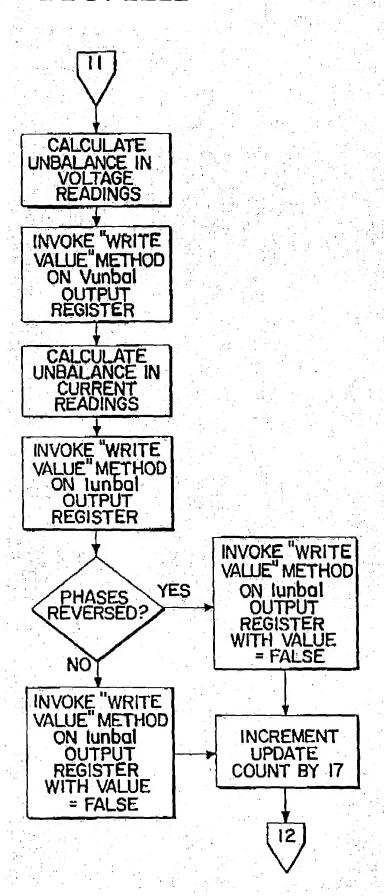


FIG. 12K

(22/63)

FIG. 12L



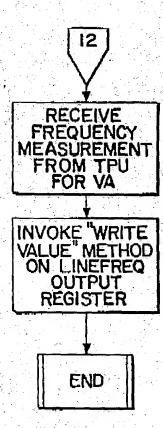
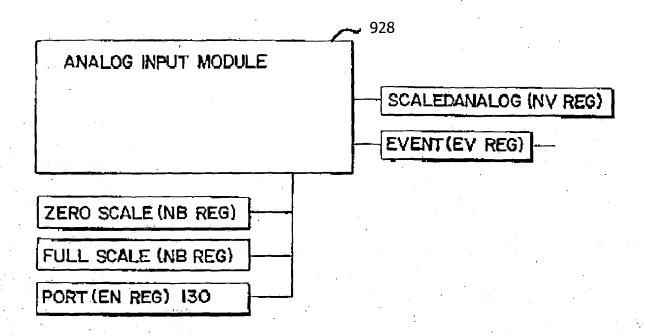
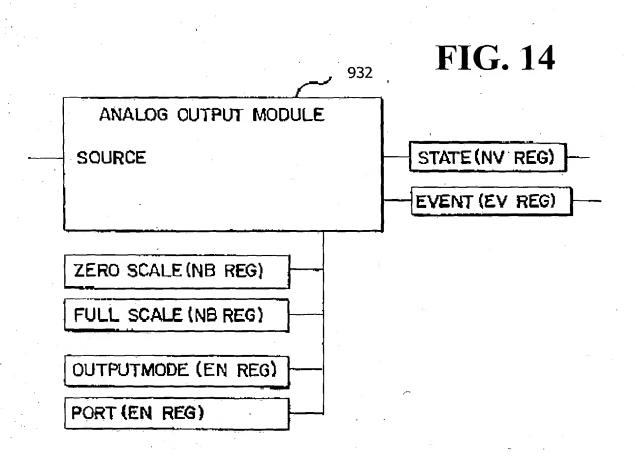
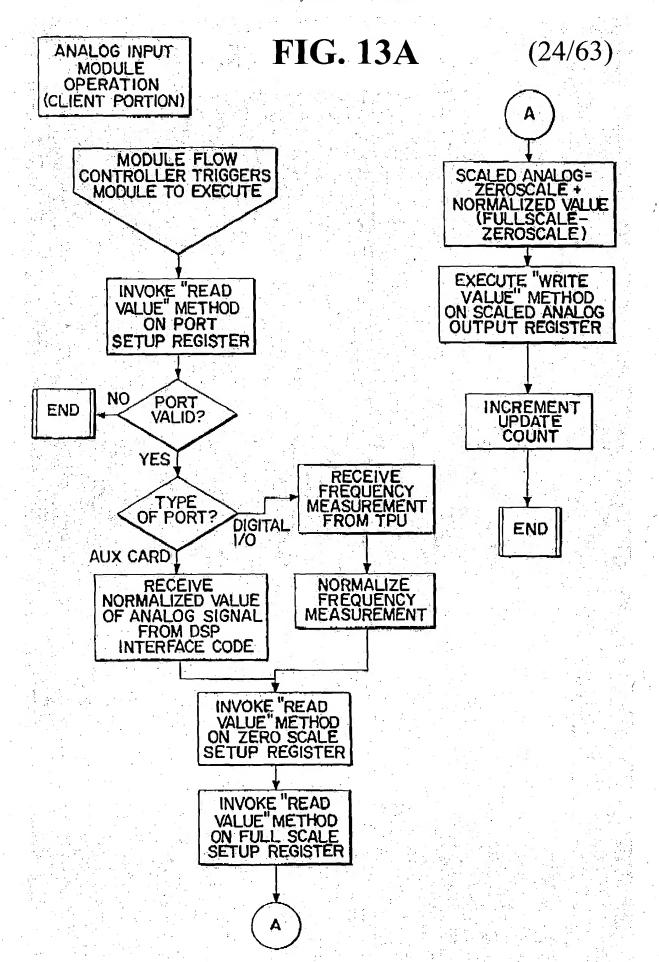


FIG. 13 (23/63)

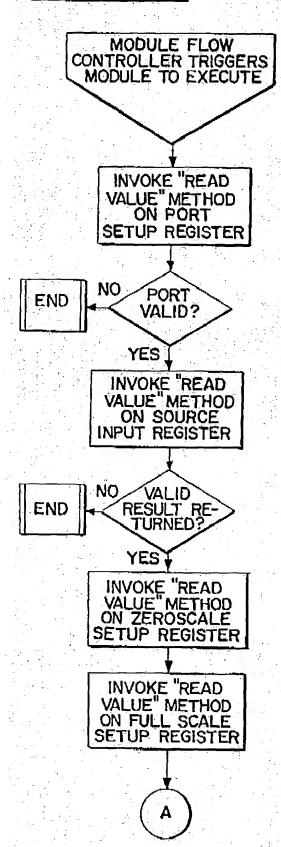






ANALOG OUTPUT MODULE OPERATION (CLIENT PORTION)

FIG. 14A (25/63)



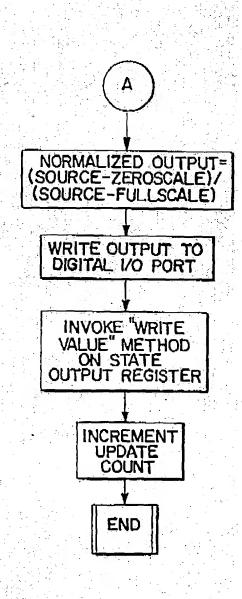


FIG. 15

(26/63)

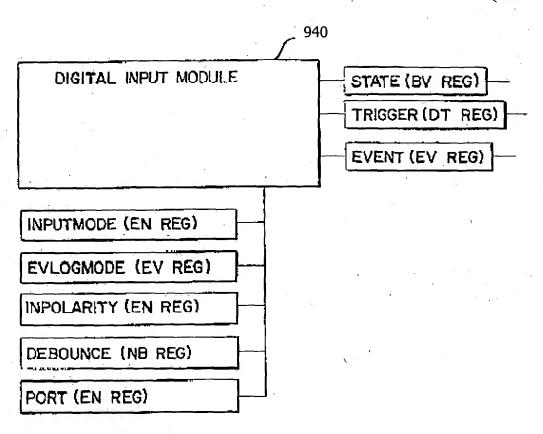
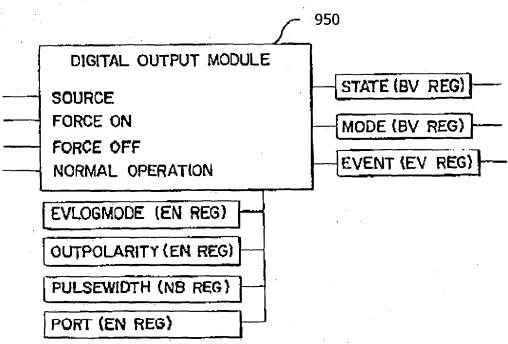
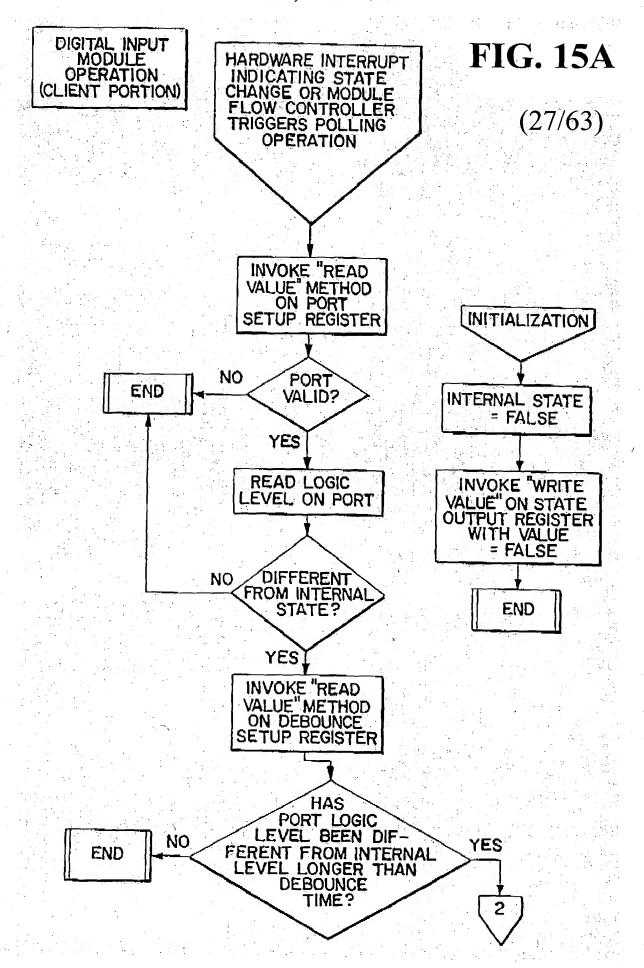
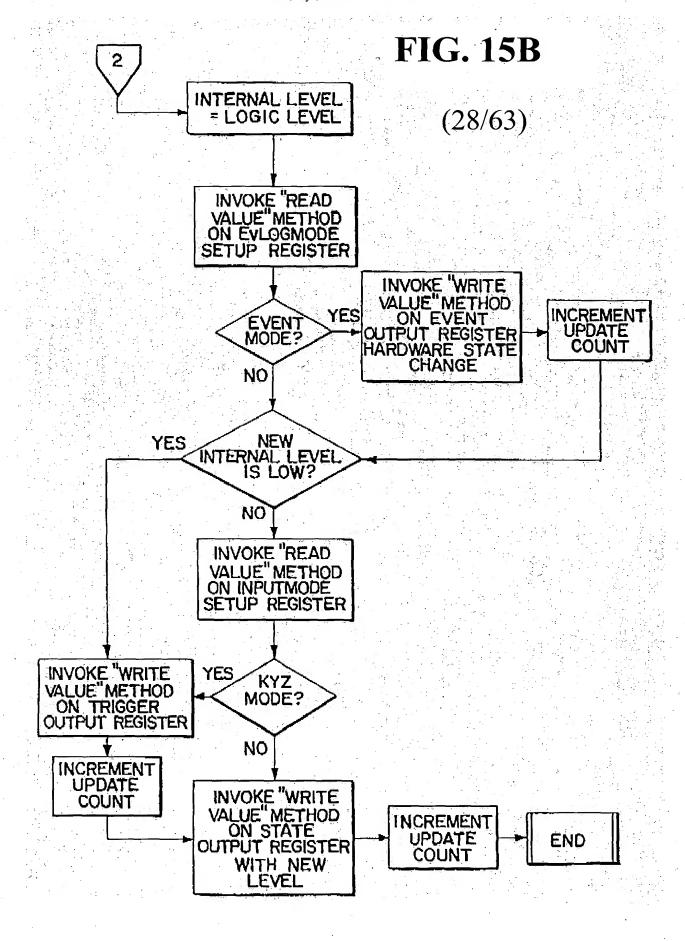
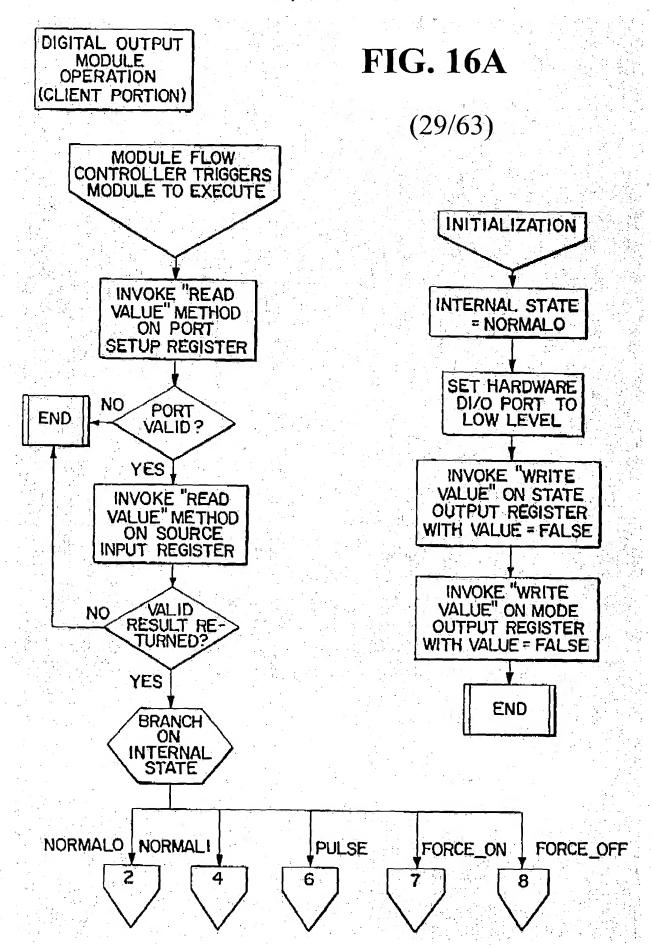


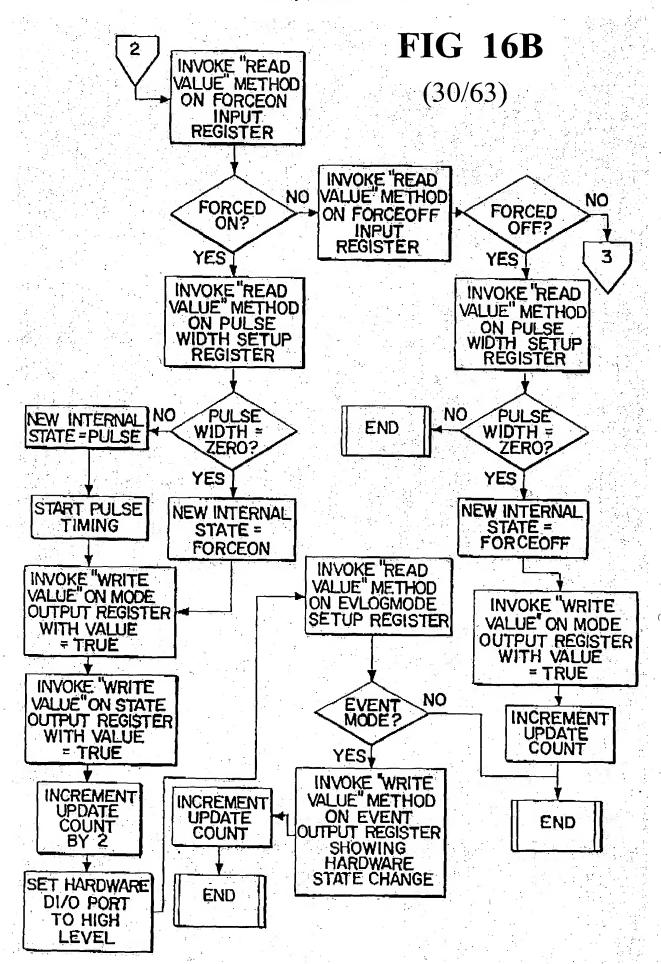
FIG. 16

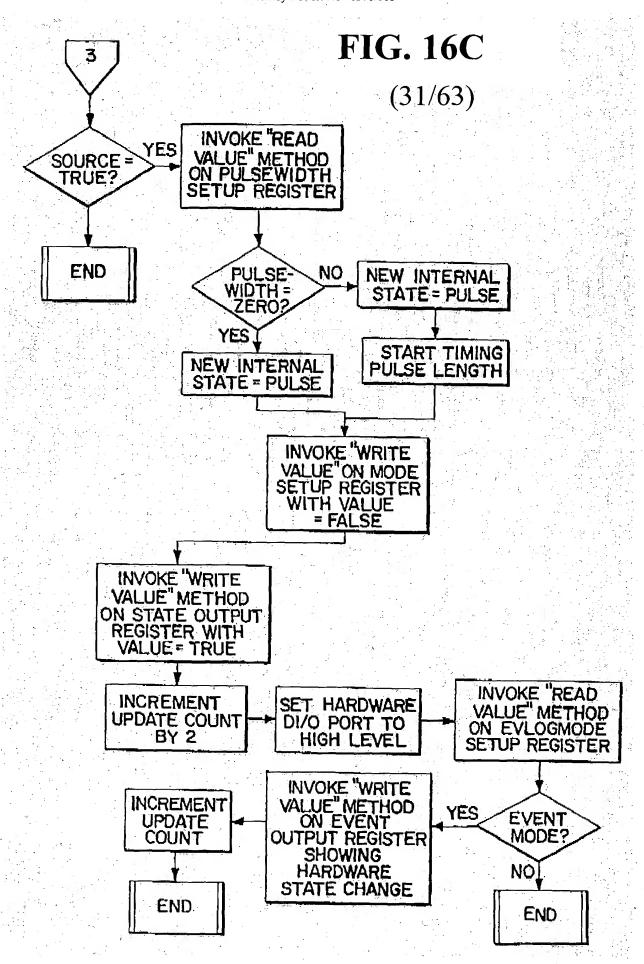












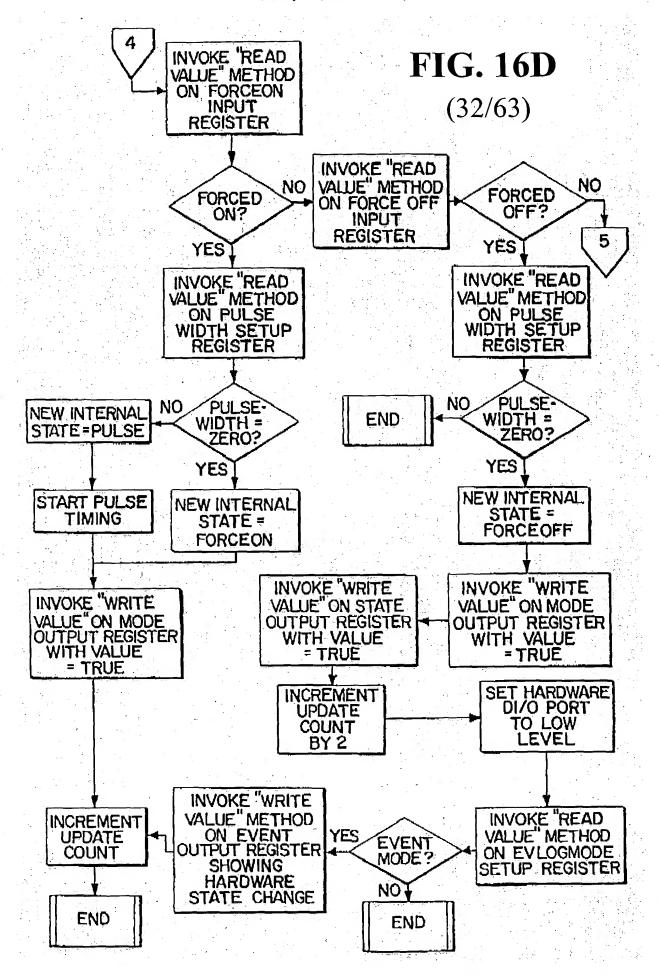
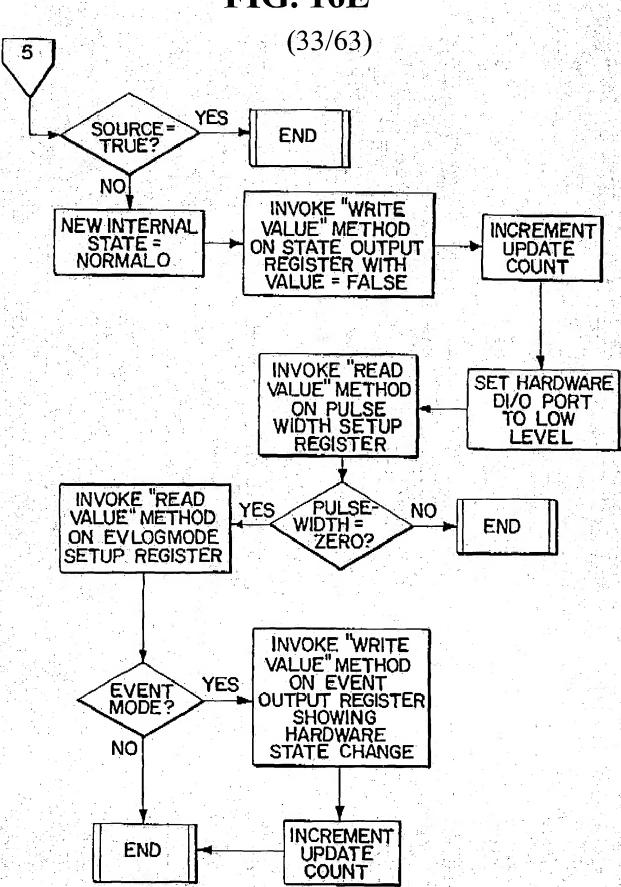
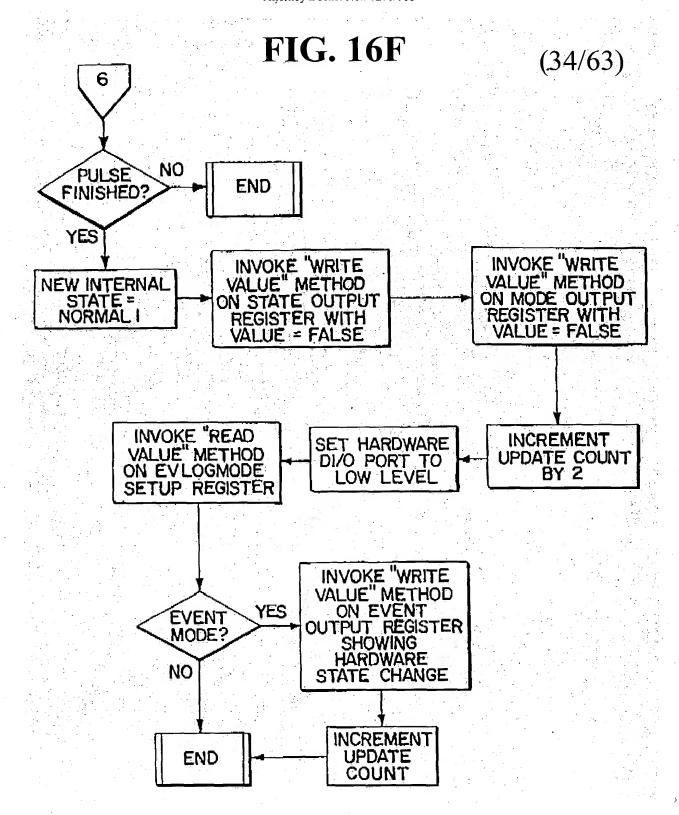
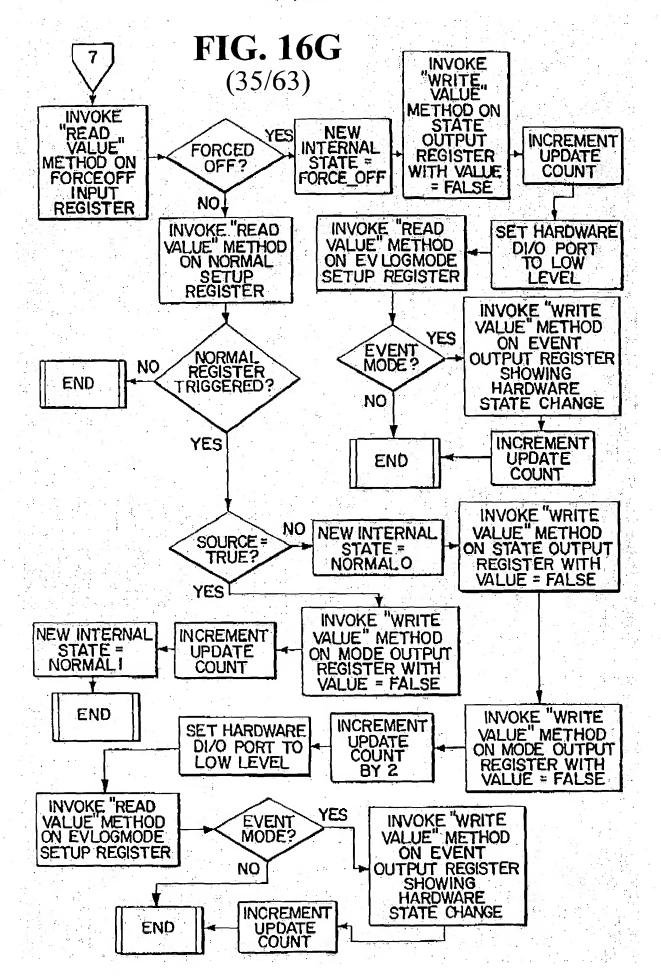
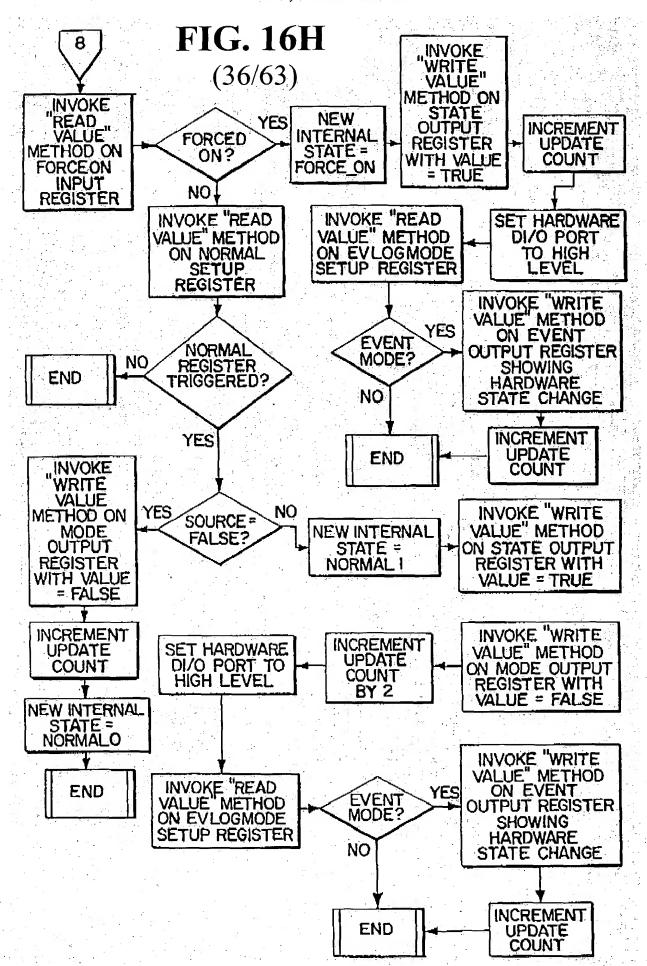


FIG. 16E









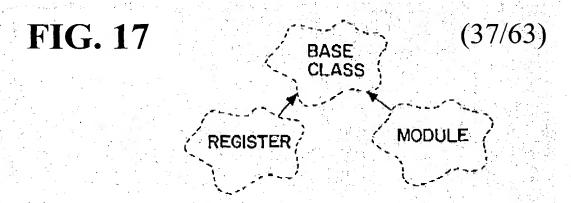
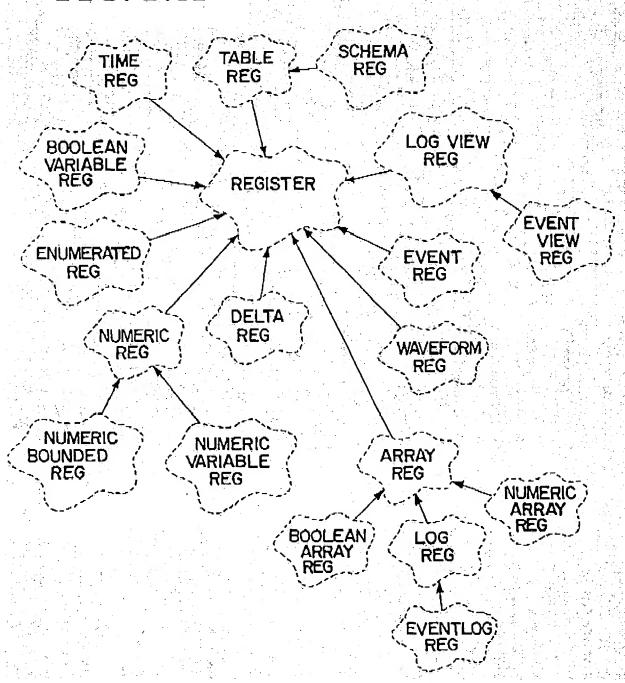
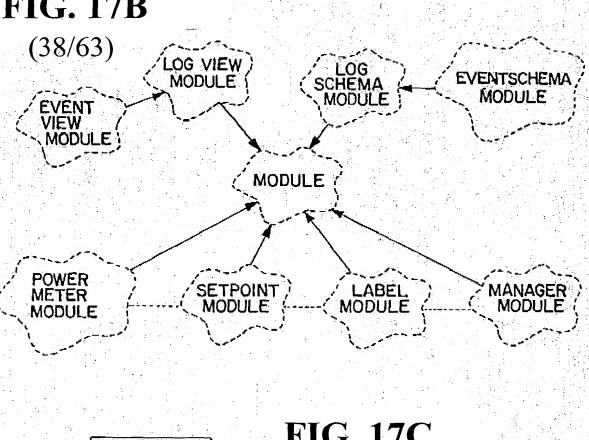


FIG. 17A







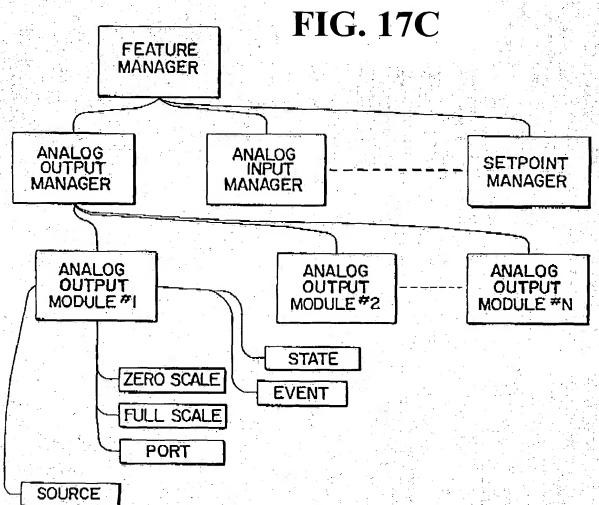


FIG. 18

(39/63)

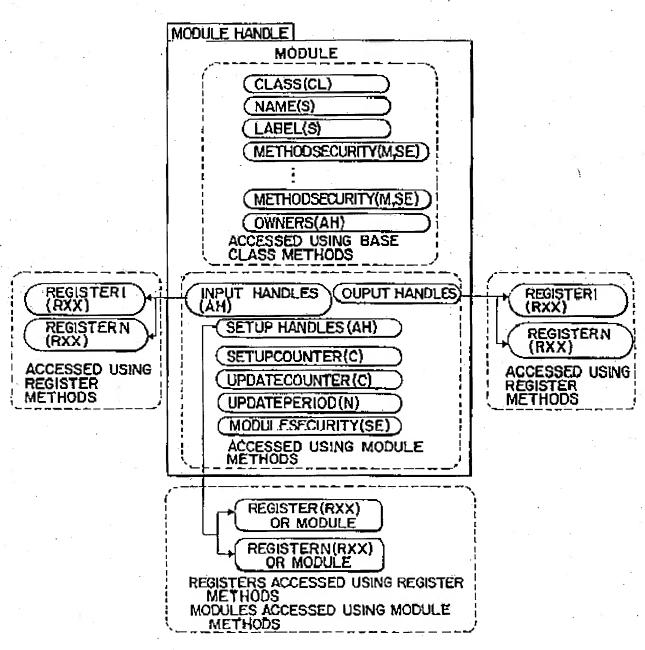
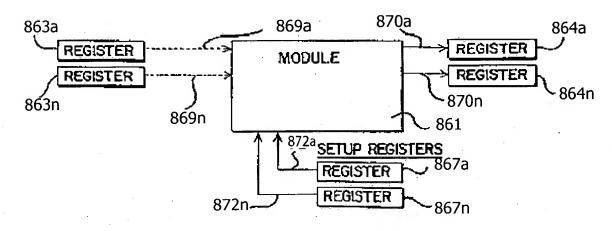
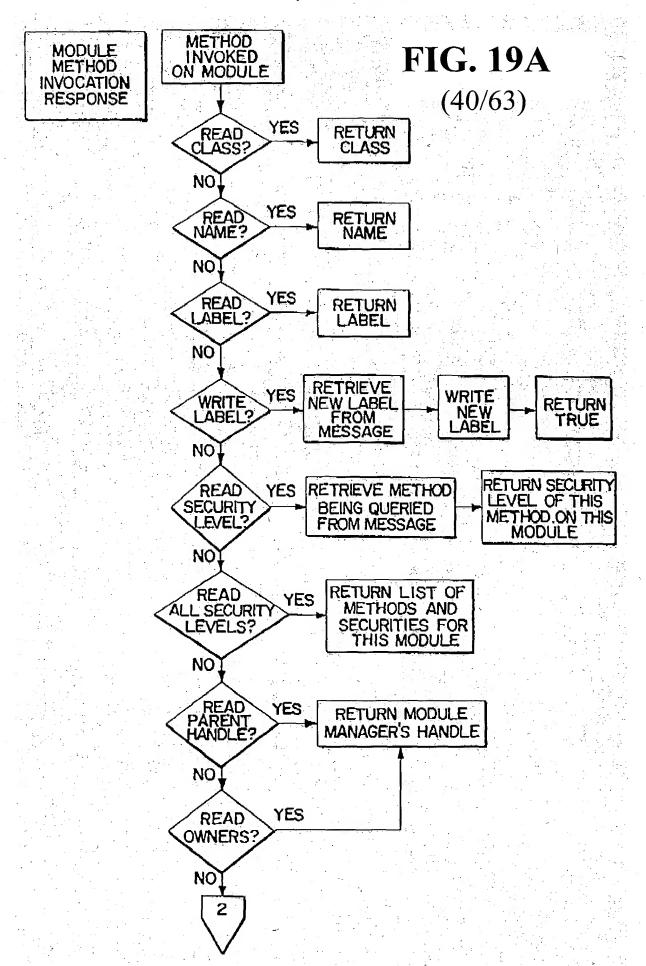
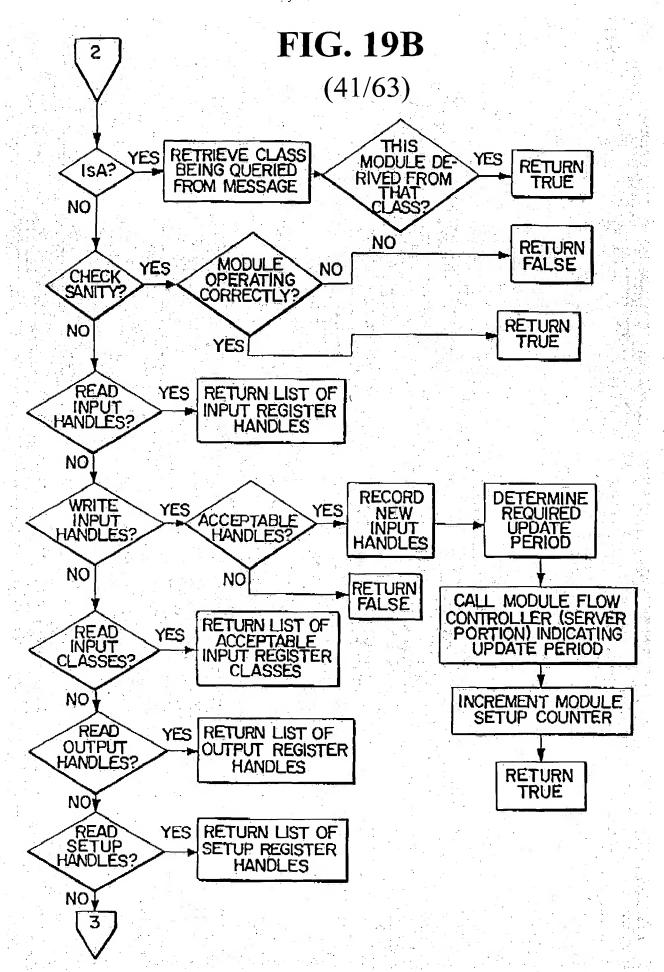


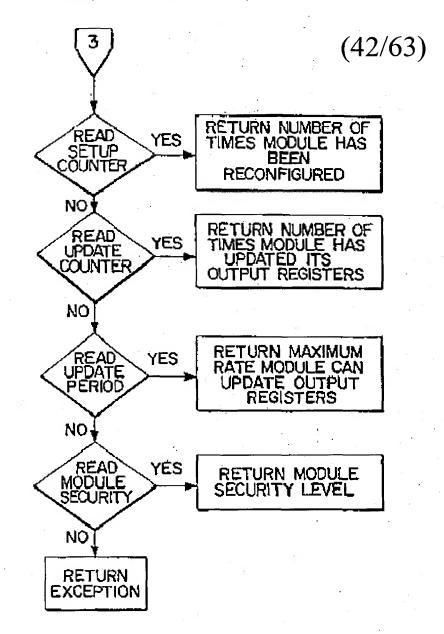
FIG. 19











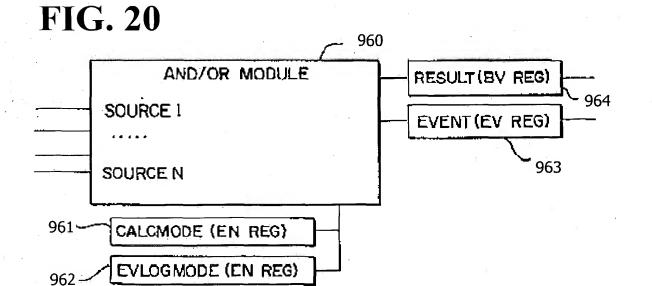


FIG. 20A

(43/63)

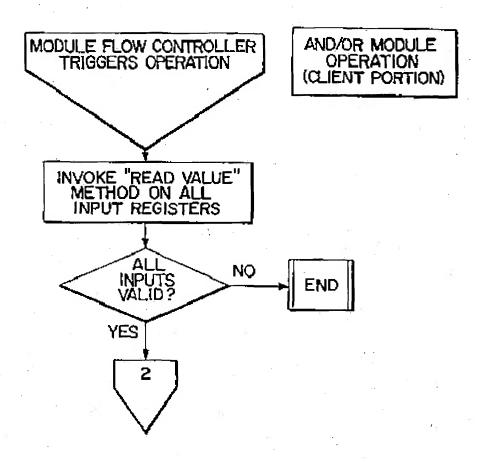
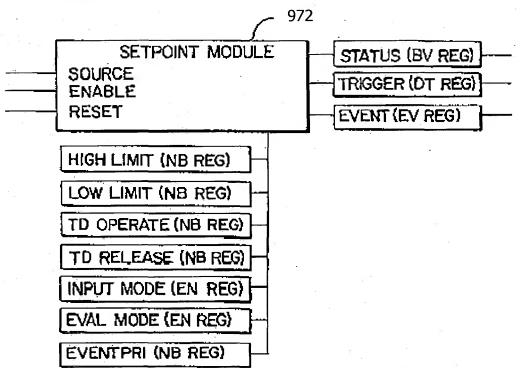


FIG. 21



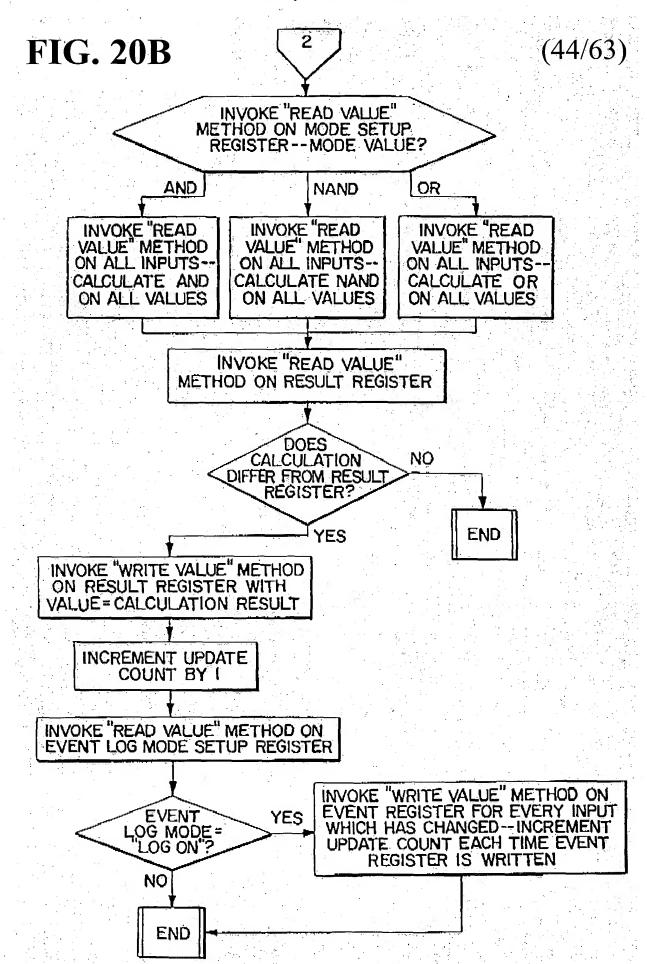
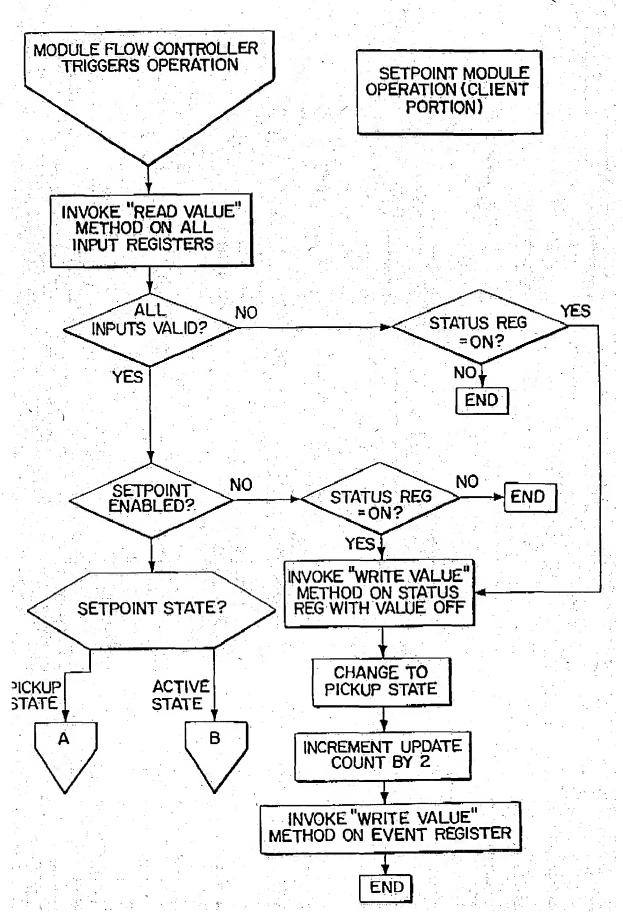
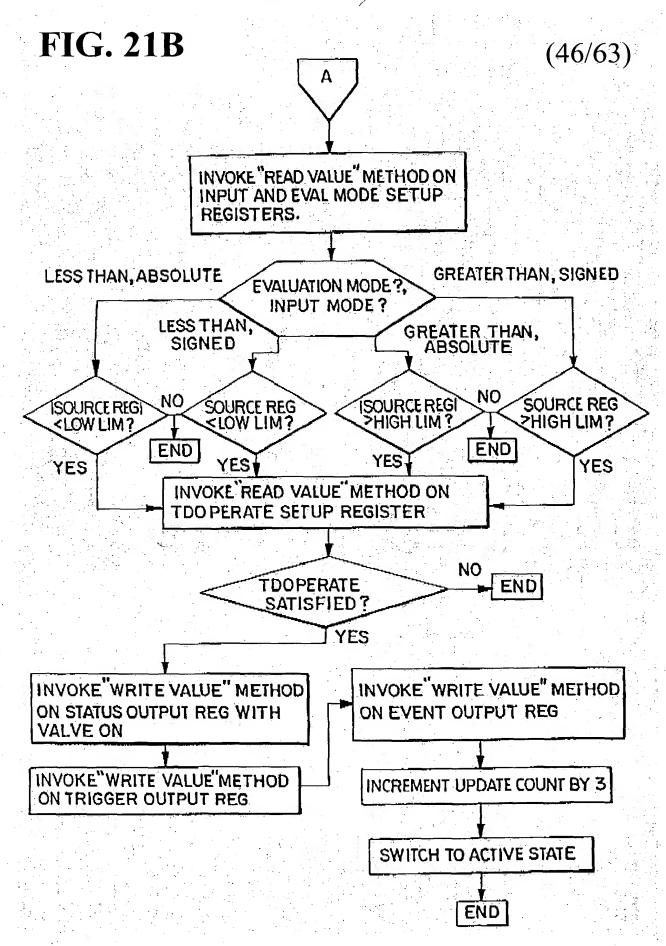
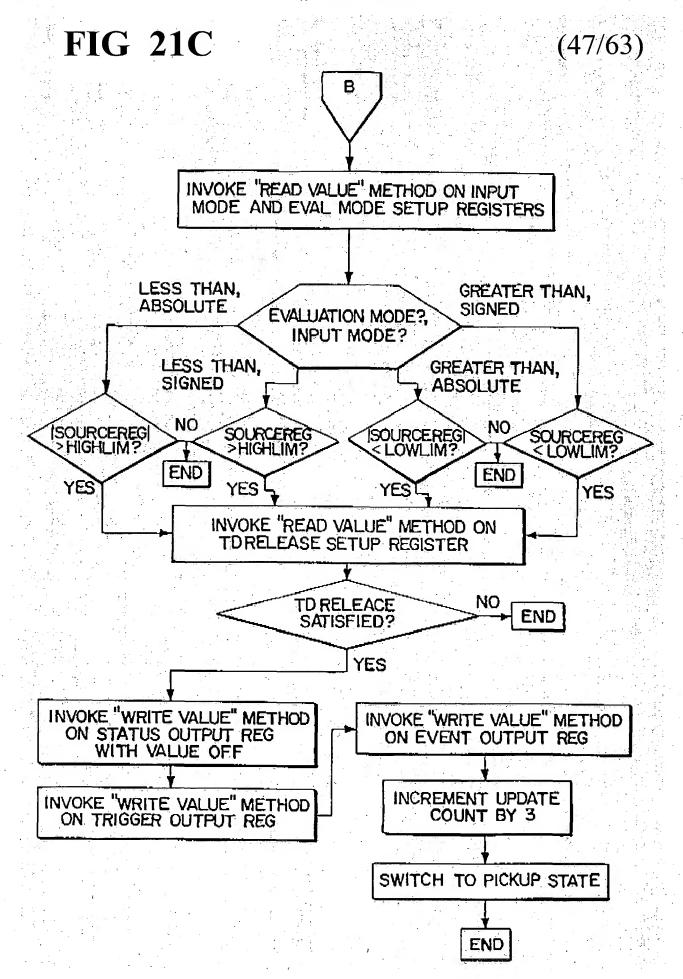


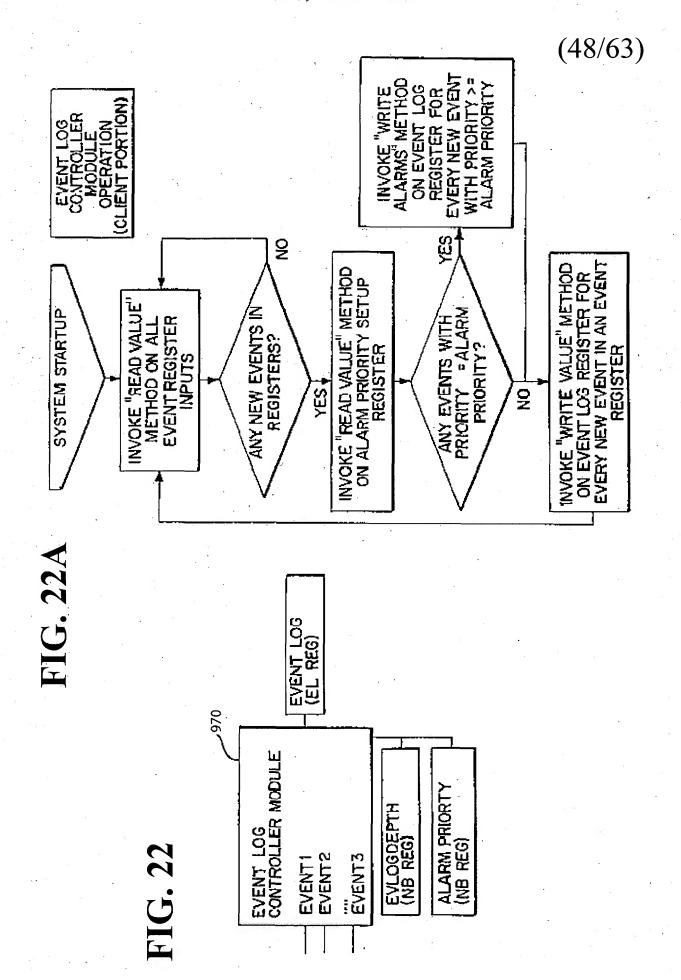
FIG. 21A

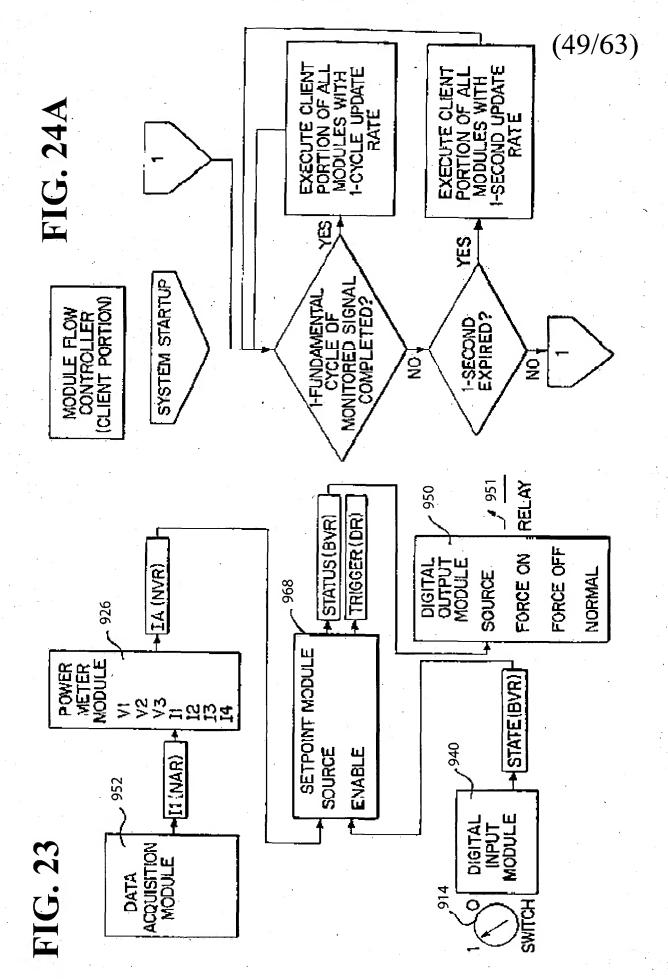
(45/63)

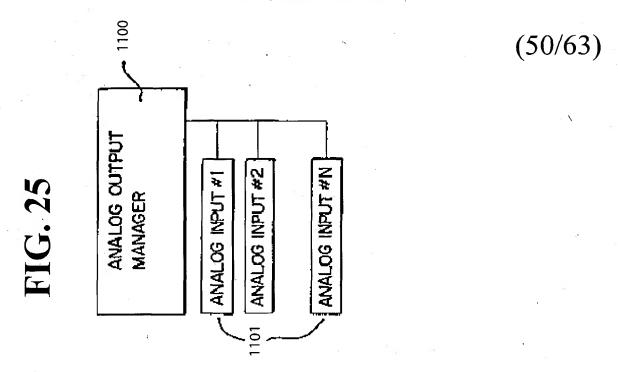


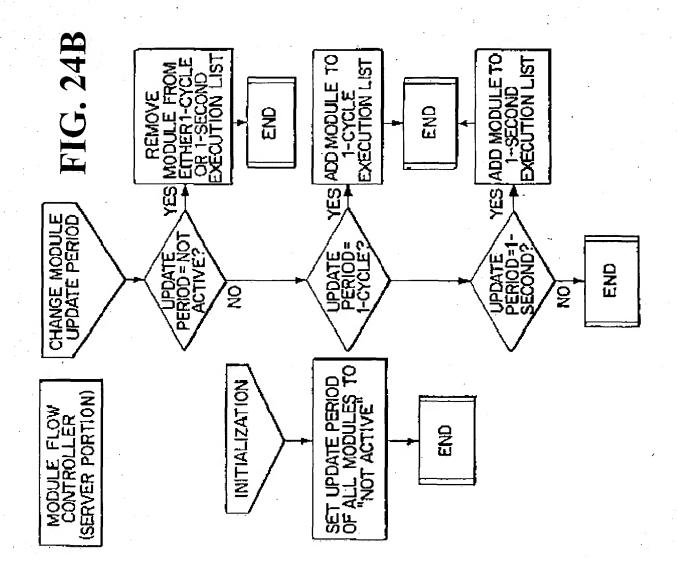


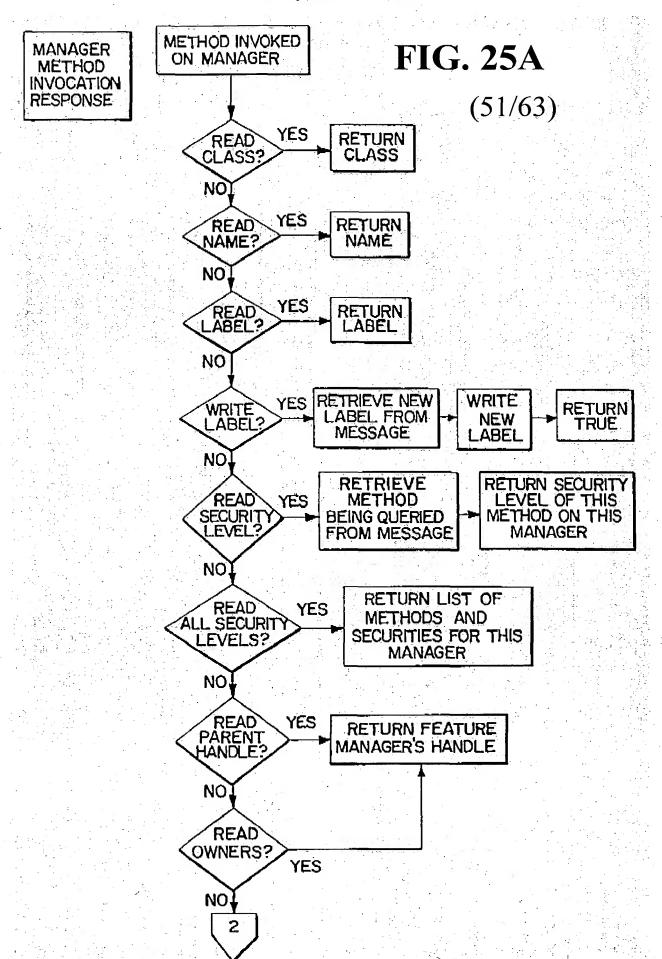












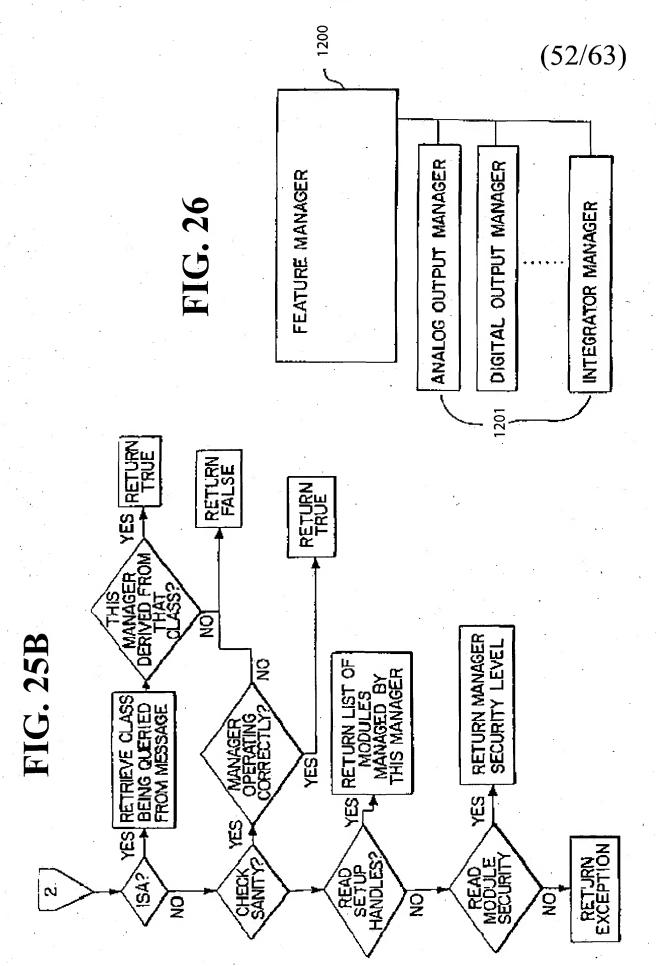




FIG. 26A

(53/63)

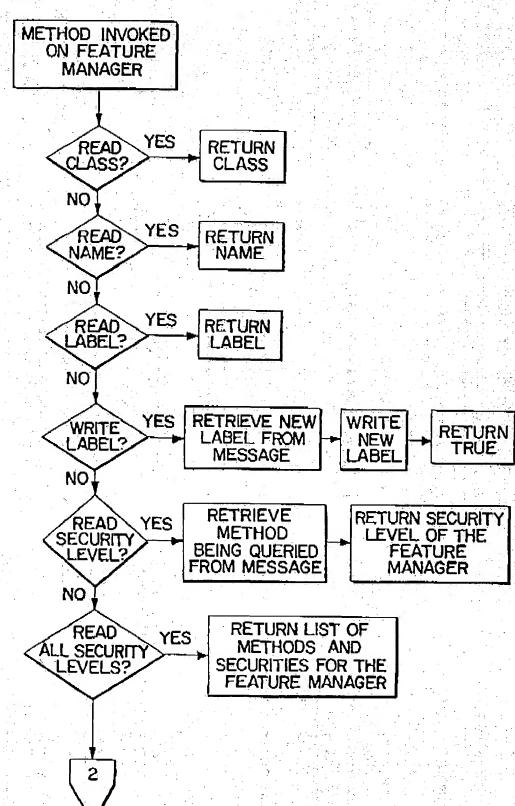
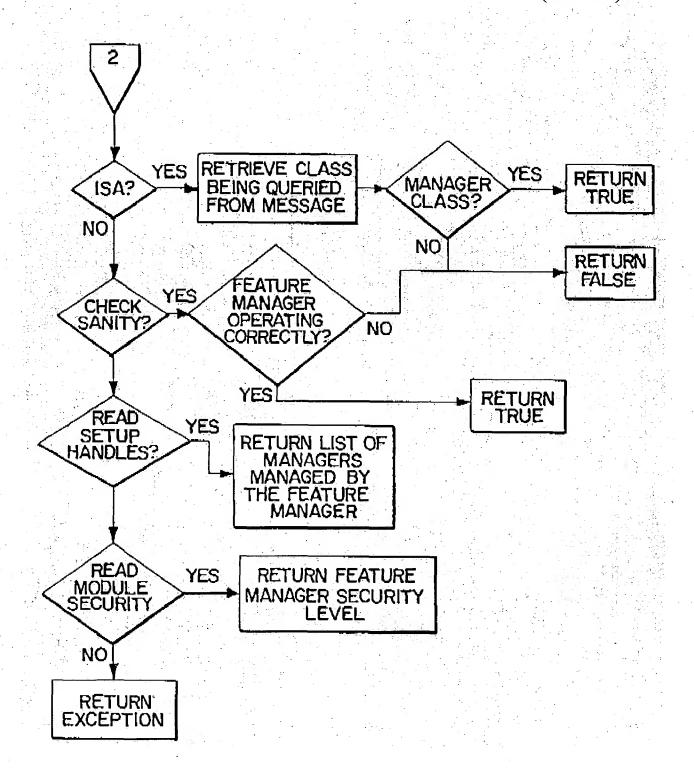
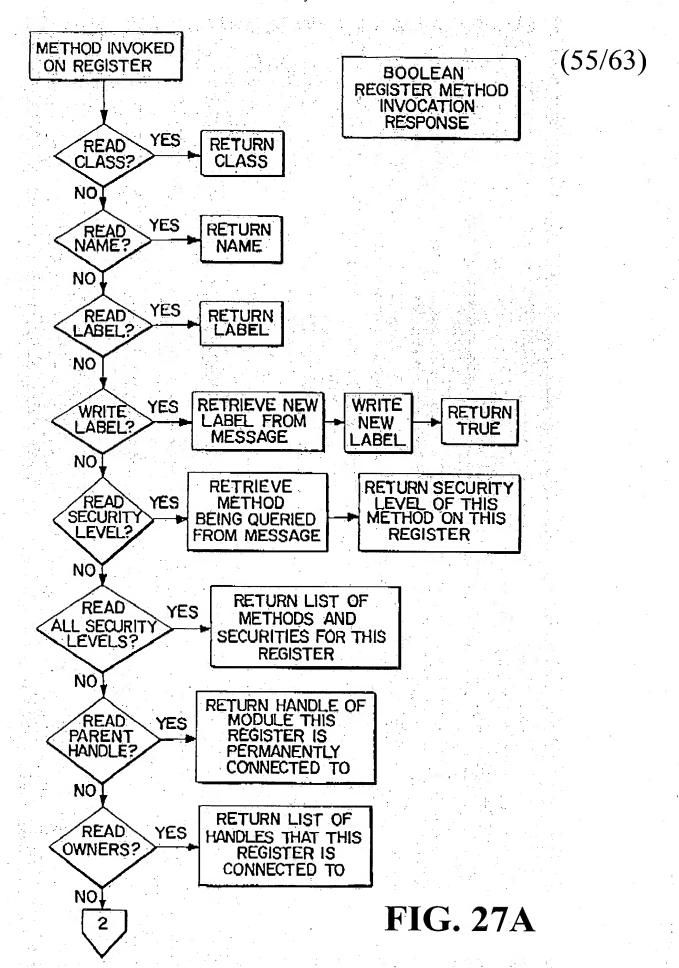


FIG. 26B

(54/63)





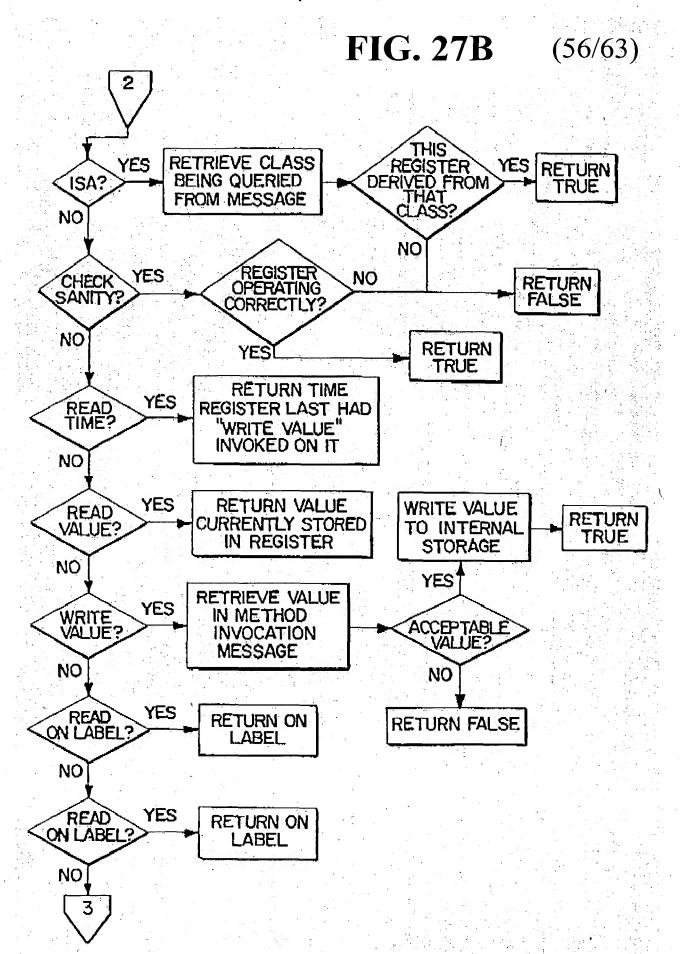
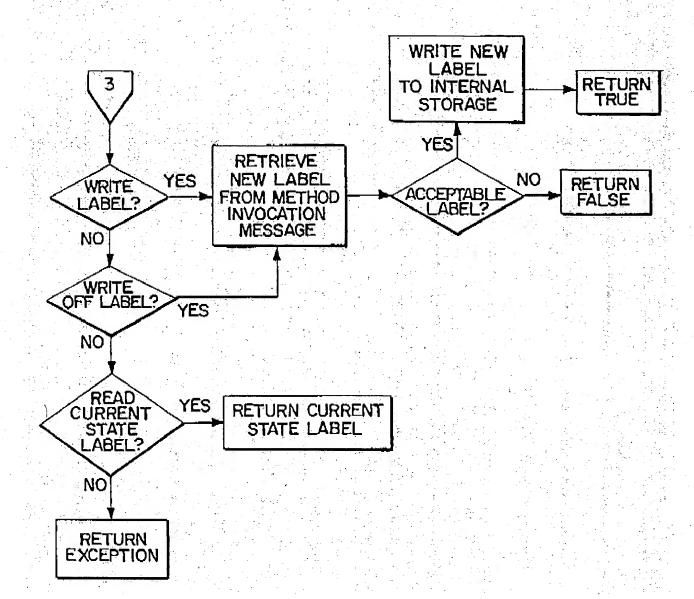
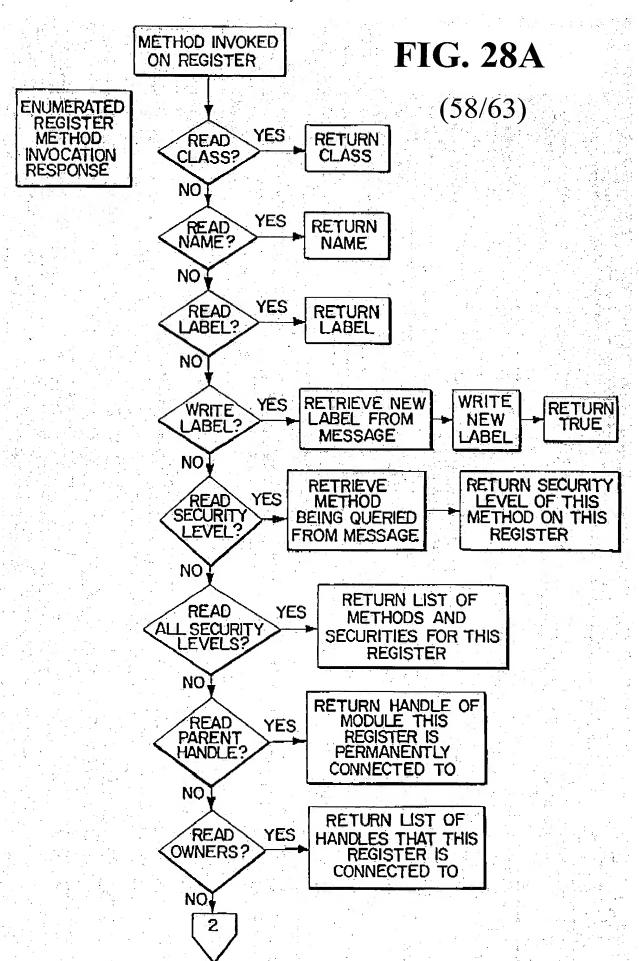
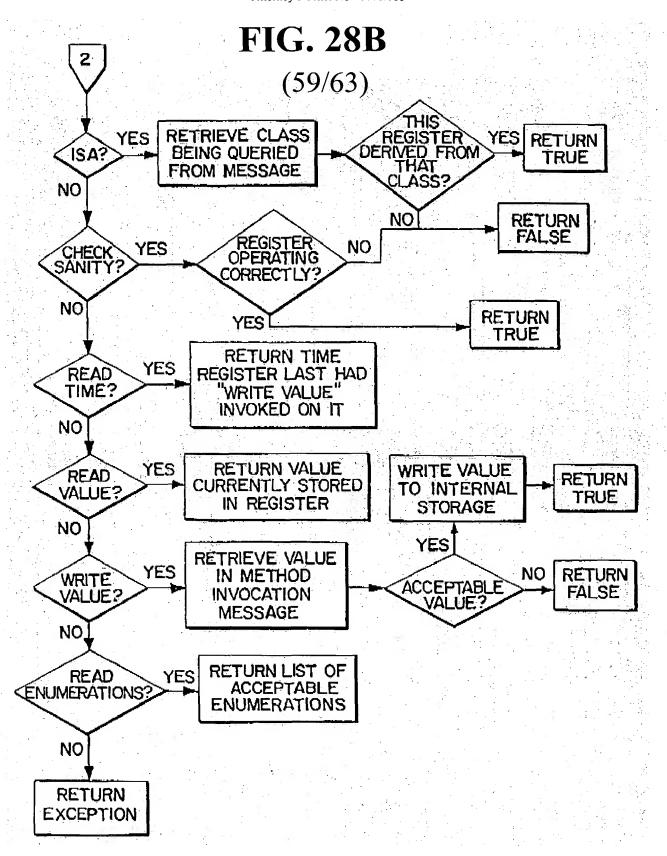


FIG 27C

(57/63)







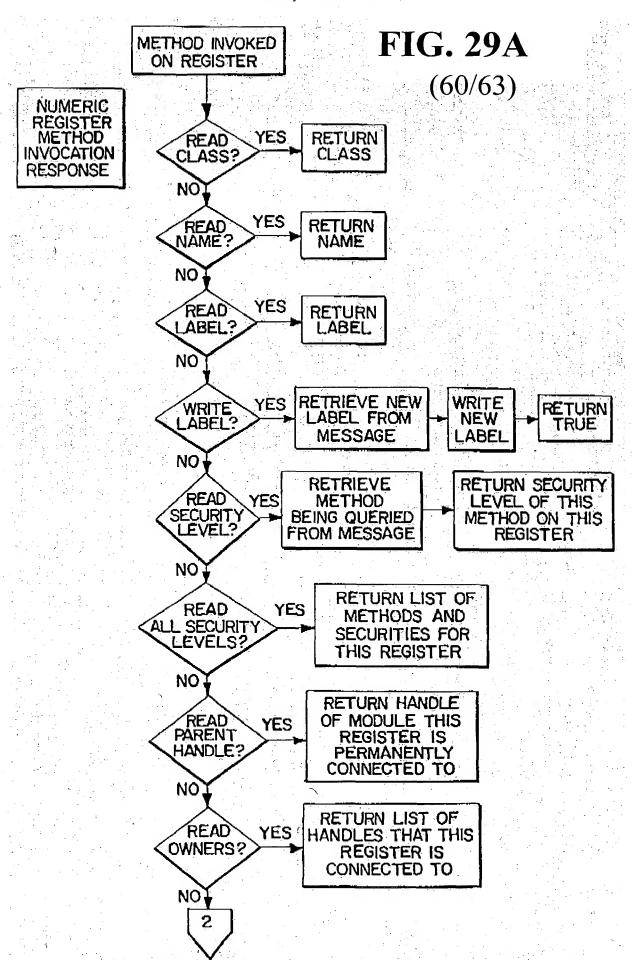


FIG. 29B

